


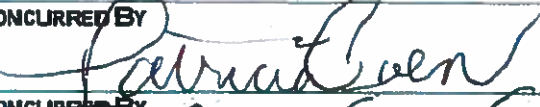








	<b>QUALITY PLAN</b> <b>SYSTEM LEVEL PROCEDURE</b> <small>ISO 9001:2008 SOC NEVADA LLC</small>	<b>DOCUMENT No.</b>  <b>QP.EMS.HG0003</b>
	<b>TITLE</b>  <b>PROCESS HAZARD ANALYSIS PROCEDURE FOR MERCURY STORAGE AND TRANSFER PROGRAM AND THE CO<sub>2</sub> FIRE SUPPRESSION SYSTEM TO COMPLY WITH THE NDEP</b>	<b>REV. 7</b>
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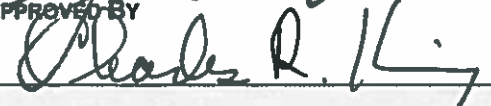
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APPROVAL SIGNATURES		
<b>PREPARED/REVIEWED BY</b>  <b>RENEE LITTLE, SECRETARY BASE OPERATIONS</b>	<b>DATE</b>  <b>9/2014</b>	
<b>PREPARED/REVIEWED BY</b>  <b>ROBERT MATHIAS, FIRE CHIEF BASE OPERATIONS</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b> BOYNTON.JASON. D.1228903430 <small>Digitally signed by BOYNTON.JASON.D.1228903430 DN: cn=JASON, o=U.S. Government, ou=DoD, ou=PKI, ou=DLA, cn=BOYNTON.JASON.D.1228903430 Date: 2014.09.16 09:46:17 -0400</small>	<b>MANAGER DLA STRATEGIC MATERIALS SAFETY</b>  <b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b> BOYNTON.JASON. D.1228903430 <small>Digitally signed by BOYNTON.JASON.D.1228903430 DN: cn=JASON, o=U.S. Government, ou=DoD, ou=PKI, ou=DLA, cn=BOYNTON.JASON.D.1228903430 Date: 2014.09.16 09:46:17 -0400</small>	<b>MANAGER DLA STRATEGIC MATERIALS FACILITY</b>  <b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b> HARDER.CHARLES.122907 0270 <small>Digitally signed by HARDER.CHARLES.1229070270 DN: cn=US, o=U.S. Government, ou=DoD, ou=PKI, ou=DLA, cn=HARDER.CHARLES.1229070270 Date: 2014.09.16 10:30:10 -0400</small>	<b>MANAGER DLA STRATEGIC MATERIALS PROJECT</b>  <b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>TOM ERICKSON, MANAGER SOC ENVIRONMENTAL SERVICES</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>PATRICIA COEN, MANAGER SOC SAFETY</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>LEANNE CORNELL, MANAGER QUALITY ASSURANCE</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>THERESA VINSON, DIRECTOR SOC BUSINESS MANAGEMENT</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>NANCY RUTHERFORD, MANAGER SOC HUMAN RESOURCES</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>HUGH QUALLS, DIRECTOR BASE OPERATIONS</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>TOM FITZGERALD, MANAGER SOC ENGINEERING, FACILITIES, AND PLANNING</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>JIM FITZGERALD, SUPERVISOR SOC EQUIPMENT MAINTENANCE, ELECTRIC SHOP</b>	<b>DATE</b>  <b>9/2014</b>	
<b>CONCURRED BY</b>  <b>JOHN GEORGE, SUPERVISOR SOC MAINTENANCE, PLANNING, AND HOUSING</b>	<b>DATE</b>  <b>9/2014</b>	

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<b>CONCURRED BY</b>  <b>DAVE MUSSELMAN, MANAGER SOC FACILITIES &amp; UTILITIES</b>	<b>DATE</b>  <b>9/2014</b>
<b>APPROVED BY</b>  <b>GEORGE GRAM, GENERAL MANAGER SOC</b>	<b>DATE</b>  <b>9/2014</b>
<b>APPROVED BY</b>  <b>REPRESENTATIVE HWAD GOVERNMENT STAFF</b>	<b>DATE</b>  <b>9/2014</b>
<input type="checkbox"/> INITIAL RELEASE <input type="checkbox"/> REVIEW, NO REVISION REQUIRED	

REVISION HISTORY			
REV	CHANGE DESCRIPTION	AUTHOR	DATE
7	Reformatted document to comply with the QMS standard 9001. Changed wording in document throughout to state Mercury Storage and Transfer Program. Added DLA personnel responsibilities of the CAPP Training Program procedure. Added administrative changes to the signature block. All Tier 1 documents are available on the G-drive: G:\Intranet\Environmental\environmental programs\air\CAPP from Intranet	Robert Mathias, SOC FES/ Renee Little BOP's Secretary	09/2014
6	Delete reference to: SOP-DZHC-0000-M-010 and Mercury Shipment Security (DPD.IOP.GRD.006)	Yvonne Downs, SOC Env/ Rob Mathias, SOC FES/ Cheri Bryant, SOC Security/ Teresa McNally, SOC Traffic/ Suzy Berry, SOC QA	03/21/13
5	Added Approval Signatures to this document. Added the following to the Approval Signatures, "By reviewing and approving this procedure, the approver understands and will comply with the state procedure. Your signature is proof that training has been provided. The approver also understands that he/she may withhold their signature if he/she has questions about the content and may contact SOC Environmental Services to resolve questions." MOC #0051 Meeting held 05-25-11 Added Biz Mgmt Office Dir, Storage Planner, Maintenance, Planning & Housing Supervisor, & M&L Dir to signature lines and updated personnel titles. Deleted "TMX" from Procedures Evaluated #9, "Oxygen analyzers (TMX)" Updated personnel titles Commander would like HWAD Representative to sign documents.	Yvonne Downs, SOC Env / Rob Mathias, SOC FES/ Cheri Bryant, SOC Security/ Melissa Waggoner, SOC QA/ Jason Cardenas, SOC HR/ Nancy Rutherford, SOC HR/ Wayne Larson, SOC Safety/ Julie Moss, SOC Maintenance/ Mark Jackson, SOC Eng/ Leanne Cornell, SOC HR/ Suzy Berry, SOC QA/ Via email – Teresa McNally, SOC Traffic/ Herman Millsap, DLA / Tom Erickson, PMSG Dir	06/08/11

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4	Name change from DZHC to SOC. Added PMSG Director to signature line	Yvonne Downs, Env Svcs	01/19/11
3	Combined the two from page 3 – 9. At least once every five (5) years after the completion of the initial process hazard analysis, a team that satisfies the requirements of Subsection 7 shall update and revalidate the process hazard analysis to ensure that the process hazard analysis is consistent with the current process.10. A process hazard analysis must be updated and revalidated using a team meeting the requirements of subsection 7 and pursuant to the procedures set forth in NAC 459.9549 to 459.955, inclusive.Changed DLA/DNSC to DLA Strategic Materials and added to definitions.	Yvonne Downs, Env Svcs/ Sandra Carroll Tetra Tech/ Herman Millsap, DLA	09/27/10

REFERENCE DOCUMENTS	
DOCUMENT NUMBER	DOCUMENT TITLE

DOCUMENTS REFERENCED IN THIS PROCEDURE ARE APPLICABLE TO THE EXTENT SPECIFIED HEREIN.

1. PURPOSE

The purpose of the Process Hazard Analysis (PHA) Procedure is to ensure that all hazards are identified, understood and mitigated before introducing highly hazardous substances to the process subject to the Chemical Accident Prevention Program (CAPP) regulations, such as the Mercury Storage and Transfer Program at Hawthorne Army Depot (HWAD). The PHA Procedure will assure that appropriate safety, operating, maintenance and emergency procedures are in place as required by the CAPP regulations. The PHA will be implemented [e.g., documented and approved by Nevada Division of Environmental Protection (NDEP)] prior to the initial startup of the CAPP regulated process, and, thereafter, must be updated and revalidated at least once every five years after the completion of the initial PHA.

2. ACRONYMS AND DEFINITIONS

- o CAPP – Chemical Accident Prevention Program
- o CFR – Code of Federal Regulations
- o CO<sub>2</sub> – Carbon dioxide
- o DLA – Defense Logistics Agency Strategic Materials
- o FES – Fire & Emergency Services

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- o Hg – Mercury
- o HWAD – Hawthorne Army Depot
- o ISO – International Organization for Standardization
- o MOC – Management of Change
- o NAC – Nevada Administrative Code
- o NDEP – Nevada Division of Environmental Protection
- o NRS – Nevada Revised Statutes
- o PHA – Process Hazard Analysis
- o PSI – Process Safety Information
- o PSSR – Pre-Startup Safety Review
- o SOC – SOC Nevada LLC
- o SP – Standard Procedure
- o 1-MT– one metric ton
- o 3-L- three liters
- o BSI- Building Solutions Inc. Reno NV
- o CFM– cubic feet per minute
- o EPA– Environmental Protection Agency
- o F– Fahrenheit
- o FMEA– Failure Mode Effective Analysis
- o HVAC– Heating Ventilation and Air Conditioning System
- o MMS– Mercury Monitoring System
- o MMTS– Mobile Mercury Transfer System
- o NEC– National Electric Code
- o ORNL– One Ridge National Laboratory
- o OSHA– Occupational Safety & Health Administration
- o PEID– Process and Instrumental Diagram
- o PCIDAS– Process Control and Data Acquisition
- o PPE– Personal Protective Equipment
- o QD– Quick Disconnect
- o RPN– Risk Priority Number
- o UBC– University of British Columbia
- o UPS– Uninterruptable Power Supply
- o VAC– Volts Alternating Current

### 3. REGULATORY REQUIREMENTS

This procedure is required by the NDEP CAPP under Nevada Administrative Code (NAC) 459.95414. The Mercury Storage and Transfer Program, operated by the SOC Nevada LLC (SOC), and DLA Strategic Materials at HWAD must comply with:

**NAC 459.95414 Process hazard analysis. (NRS 459.3818, 459.3833)**

1. The owner or operator shall perform an initial process hazard analysis on a process that is subject to CAPP before introducing highly hazardous substances or explosives to the process.

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2. An owner or operator may use a process hazard analysis that was previously completed to comply with NRS 459.380 to 459.3874, inclusive, or 29 CFR § 1910.119(e) to satisfy the requirement to perform an initial process hazard analysis provided that the analysis reflects the current process.
3. The owner or operator shall obtain the approval of the Division concerning the methodology of the process hazard analysis before conducting the analysis.
4. The owner or operator shall select one or more of the following methodologies as required by the complexity of the process:
  - (a) A "what if" analysis;
  - (b) A checklist;
  - (c) A "what if" analysis combined with a checklist;
  - (d) A hazard and operability study;
  - (e) A failure mode and effects analysis;
  - (f) A fault tree analysis; or
  - (g) An appropriate equivalent methodology.
5. When preparing a process hazard analysis, an owner or operator shall consider:
  - (a) The hazards of the process;
  - (b) Any previous incident that had a likely potential for catastrophic consequences, including, without limitation, near misses or accidental releases;
  - (c) The engineering and administrative controls that are applicable to the hazards and their interrelationships, including, without limitation, the appropriate application of detection methodologies such as process monitoring, control instrumentation with alarms or detection hardware;
  - (d) The consequences of a failure of engineering and administrative controls;
  - (e) The siting of the facility;
  - (f) The human factors; and
  - (g) A qualitative evaluation of a range of the possible safety and health effects of a failure of controls.
6. If not evaluated as part of the process hazard analysis pursuant to subsections 1 to 5, inclusive, a separate, dedicated hazard analysis, utilizing a checklist or other appropriate method, must be conducted to evaluate:
  - (a) Human factors;
  - (b) Facility siting; and
  - (c) External forces.
7. The owner or operator shall conduct the process hazard analysis with a team with expertise in engineering and process operations. The team must consist of two or more persons and include at least:
  - (a) One member who has experience and knowledge specific to the process being evaluated; and
  - (b) One member who is knowledgeable in the methodology for the specific process hazard analysis being used.
8. The owner or operator shall:

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- (a) Promptly evaluate the findings and recommendations of the team formed pursuant to subsection 7;
  - (b) Determine and document a course of action based on the evaluation;
  - (c) Develop a written schedule of when the actions are to be completed;
  - (d) Complete the actions as soon as possible and document each such completion; and
  - (e) Communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.
9. At least once every five (5) years after the completion of the initial process hazard analysis, a team that satisfies the requirements of Subsection 7 shall update and revalidate the process hazard analysis to ensure that the process hazard analysis is consistent with the current process pursuant to the procedures set forth in NAC 459.9549 to 459.955, inclusive.
10. An owner or operator shall retain a process hazard analysis and an update and revalidation for each process subject to this section, as well as any documented resolution of recommendations described in subsection 8, for the life of the process.
11. A new process hazard analysis was developed for the Mobile Mercury Transfer System (MSSP- 43 Rev1) to comply with this procedure and will be an addendum to the Mercury Storage and Transfer Program.

#### 4. RESPONSIBILITIES

##### **SOC Environmental Services Manager and DLA Strategic Materials Safety Manager**

Has overall responsibility for the technical administration and requirements for the development, implementation, update and revalidation of the PHA studies, including identification of the necessary team members, and this PHA Procedure to ensure that CAPP requirements are met.

##### **SOC Fire and Emergency Services (FES) Chief**

Has responsibility for management of Hg monitoring and emergency response to include the testing, inspection, and maintenance of the low pressure CO<sub>2</sub> fire suppression systems in the Hg storage warehouses, maintenance of the mercury vapor monitoring instrumentation (calibration), and specifying safe work practices for fire (emergency response) personnel in accordance with internal procedures and per this procedure, including Lockout/Tagout procedures and maintenance personnel. FES Chief or his designee and personnel are key members of the PHA team.

##### **SOC Equipment Maintenance, Electric Shop Supervisor**

Has responsibility for the electrical, refrigeration and relief valve components of the CO<sub>2</sub> systems and fork lifts, ensuring that equipment management programs are in place, and that maintenance is performed in accordance with internal procedures. As such, participation on the PHA team is essential.

##### **SOC Safety & Health Manager**

Has responsibility for the safety operations and identifying process safety aspects of the Mercury Storage and Transfer Program.

##### **SOC Quality Assurance (QA) Manager**

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Has responsibility for: inspecting mercury containers and the containment systems within the mercury storage warehouses; ensuring that a maintenance program is in place; and that maintenance is performed in accordance with internal procedures. Participation on the PHA team is essential.

**SOC Engineering, Facilities, and Planning Manager**

Has responsibility for providing engineering technical support to the FES Chief and Equipment Maintenance Manager. Participation on the PHA team is essential.

**SOC Facility & Utilities Manager**

Is responsible for the maintenance of buildings (mercury storage warehouses) and ensuring that maintenance is performed in accordance with internal procedures. Participation on the PHA team is essential.

**SOC Maintenance, Planning and Housing Supervisor**

Is responsible for the MAXIMO Database, the computer system that initiates requests for preventive maintenance, inspections and tests; documents the results of those activities, initiates Work Orders when maintenance is needed; and tracks the completion of Work Orders. Participation on the PHA team is essential.

**SOC General Manager & HWAD Commander**

Has administrative responsibility for ensuring that PHA studies are conducted, updated, and revalidated as required by the NAC.

5. PROCEDURES FOR PROCESS HAZARD ANALYSIS

The steps developed for the PHA Procedure are described below. The initial PHA study and additional PHA addendums will evaluate the entire Mercury Storage and Transfer Program. At least once every five years after the completion of the initial PHA, a team will be assembled and will update and revalidate the prior PHA study (via review of PSI documentation and the PHA supporting documentation) to ensure that the PHA documentation is consistent with the current process.

The PHA for MMTS will be an addendum to the Process Hazard Analysis Program to comply with this procedure.

**PSI Verification**

The SOC Environmental Services Manager will verify PSI by the following methods and criteria:

1. Review the existing PSI Tier 1 including all attachments;
2. Review the MOC log for all replacements in kind and system replacement changes;
3. Review MAXIMO output for current maintenance records and parts replacement;
4. Review final as-built drawings and compare the current information for the system to the drawings;
5. Identify and record all changes to the PSI; and
6. Update the PSI to reflect current operating conditions.

**PHA Preparation and Sequence of the Study**

The SOC Environmental Services Manager will obtain the approval of NDEP/CAPP concerning the proposed methodology of the PHA before conducting the analysis. The following methodologies are recognized by NDEP, and the usage depends on the type and complexity of the CAPP regulated process.

- A "what if" analysis;

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- A checklist;
- A "what if" analysis combined with a checklist;
- A hazard and operability study;
- A failure mode and effects analysis;
- A fault tree analysis; or
- An appropriate equivalent methodology.

The SOC Environmental Services Manager will select the members of the PHA team ensuring that the team has expertise in engineering and process operations. The team must consist of two or more persons and include at least:

- One member who has experience and knowledge specific to the process being evaluated; and
- One member who is knowledgeable in the methodology for the specific process hazard analysis being used.

The SOC Environmental Services Manager will:

- Promptly evaluate the findings and recommendations of the PHA team in the PHA report;
- Determine and document a course of action based on the evaluation including justification for not implementing a PHA recommendation;
- Develop a written schedule of when the actions are to be completed<sup>1</sup>;
- Track all PHA recommendations in the PHA Recommendation Tracking Log provided in the PHA Addendums until they are resolved;
- Complete the actions as soon as possible and document each such completion; and
- Communicate the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions. Communication options available to the Environmental Services Manager include, but are not limited to:
  - participation of staff in the PHA development,
  - posting this information on the HWAD intranet,
  - adding information to training modules,
  - and sharing the information (i.e. recommendation tracking log) during safety discussions and staff meetings.

#### PHA Key Considerations

When preparing a process hazard analysis, the PHA team shall consider:

- The hazards of the process (as identified by the Process Safety Information (PSI) Procedure and the PSI supporting documentation compiled for the process);
- Any previous incident that had a likely potential for catastrophic consequences, including, without limitation, near misses or accidental releases;

<sup>1</sup> The status of open recommendations will be addressed in the annual registration. NDEP approval of the HWAD MSP including the PHA will be used as the date of the initial PHA.

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- The engineering and administrative controls that are applicable to the hazards and their interrelationships, including, without limitation, the appropriate application of detection methodologies such as process monitoring, control instrumentation with alarms or detection hardware;
- The consequences of a failure of engineering and administrative controls;
- The siting of the facility (e.g., spacing of process equipment in relation to non-process operations or to potential sources of ignition; recognized standards; accessibility of response vehicles, proximity of delivery vehicles to process equipment, impacts of catastrophic releases, hazard classification, etc.);
- The human factors; and
- A qualitative evaluation of a range of the possible safety and health effects of a failure of controls.

If not evaluated as part of the PHA, a separate, dedicated hazard analysis, utilizing a checklist or other appropriate method, must be conducted to evaluate:

- Human factors;
- Facility siting; and
- External forces such as earthquake, high winds, lightning, loss of utilities, fire or explosion in adjacent operations, vehicular or rail car impacts, security issues.

The PHA team records the findings and documents the results of the PHA study in the PHA report.

#### PHA Updates and Revalidation

At least once every five years after the completion of the initial, a PHA team, appointed by the SOC Environmental Services Manager and that satisfies the requirements stated above, shall update and revalidate the PHA study/report(s) to ensure that they are consistent with the current process.

#### RECORDS

Records retained to support this procedure include this procedure, the completed PHA studies, final PHA reports, addendums to the PHA reports, updates and revalidation for each process, any supporting documentation and any documented resolution of recommendations. Records also include communications to operating, maintenance and other employees who work in the process or who may be affected by the recommendations or actions per the Employee Participation Program. These records shall be retained by the SOC Environmental Services Manager for the life of the process.

#### 6. PROCEDURES EVALUATED

Procedures which were identified and evaluated during the PHA studies for the Mercury Storage and Transfer Program, and the CO<sub>2</sub> Fire Suppression System and which are addressed in the PHA reports and supplemental PHA reports include the following:

1. Micro 1 EV Panels (CO<sub>2</sub> system) - DPD.IOP.FES.0015 and MAXIMO
2. Refrigeration Unit (CO<sub>2</sub> system) - BOP.IOP.EMB.1300 and MAXIMO for Relief Systems
3. CO<sub>2</sub> Fire Suppression System - DPD.IOP.FES.0015 and MAXIMO

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MERCURY STORAGE AND TRANSFER PROGRAM AND  
CO<sub>2</sub> FIRESUPPRESSION SYSTEM  
TO COMPLY WITH THE NDEP

REV. 7

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4. Warehouse (Building) Structural and Visual Grounding - Inspection of Mercury Storage Sites (SOP.QP.QAD.0002) and MAXIMO
5. Warehouse (Building) Grounding (Physical) - MAXIMO
6. Building Electrical System - MAXIMO, Electrician Maintenance Plan (BOP.IOP.EMB.1302), Electronics Technician Mercury Storage (BOP.IOP.EMB.1303)
7. CO<sub>2</sub> Valves - DPD.IOP.FES.0015 and MAXIMO
8. CO<sub>2</sub> Relief Valves - DPD.IOP.FES.0015, MAXIMO, BOP.IOP.EMB.1300, Lockout/Tagout (SOC.OHS.SP.0002, Chapter 21), Safety Hot Work Permit (SOC.OHS.SP.0002, Chapter 10)
9. Instrumentation -
  - o Hg vapor monitors (Lumex, Jerome), DPD.IOP.FES.0019, MAXIMO
  - o Oxygen analyzers, MAXIMO, DPD.IOP.FES.0017
10. Alarm systems/Interlocks – DPD.IOP.FES.0015 and MAXIMO
11. Building Natural Ventilation – MAXIMO, SOP.QP.QAD.0002 and Building Maintenance Plan
12. MMTS 1 - 27 Tier 2 Standard Operating Procedures
13. Drum/pallet and building containment systems: Inspection of Mercury Storage Sites (SOP.QP.QAD.0002), Inspection of Incoming/Outgoing Shipments of Material by Truck, Rail and Container (QAD.IOP.0006)
14. Fork lift operability – MAXIMO

#### 7. QUALITY ASSURANCE/ QUALITY CONTROL PROCEDURES AND PRACTICES

Any changes, including new equipment, instruments and controls, are checked to ensure suitability with the process by following the PHA, PSI, Management of Change (MOC) and Pre-startup Safety Review (PSSR) SPs.


The MOC, PSSR, DLA Strategic Materials and SOC Engineering Services, FES and Equipment Management Division (EMD) procedures will ensure that equipment; instruments and controls are checked to ensure installation is per design specifications and manufacturer's instruction.

The MOC, PSSR, DLA Strategic Materials and SOC Engineering Services, FES and EMD procedures will also ensure that maintenance materials, spare parts, and equipment are suitable for the process for which they will be used.

#### 8. MANAGEMENT PLAN AND DOCUMENT CONTROL

SOC Environmental Services and DLA Strategic Materials Safety Manager are responsible for the technical development, implementation and integration of this SP. The following organizations will participate in the

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	<b>QUALITY PLAN</b> <b>SYSTEM LEVEL PROCEDURE</b> <small>ISO 9001:2005 SOC NEVADA LLC</small>	<b>DOCUMENT No.</b>  <b>QP.EMS.HG0003</b>
<b>TITLE</b>	<b>PROCESS HAZARAD ANALYSIS PROCEDURE FOR MERCURY STORAGE AND TRANSFER PROGRAM AND CO<sub>2</sub> FIRESUPPRESION SYSTEM TO COMPLY WITH THE NDEP</b>	<b>REV. 7</b>  <b>PAGE 11 OF 12</b>

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development, implementation and integration of this SP and its contents and ensure their respective procedures address the requirements of this PHA Procedure for CAPP regulated processes, equipment, operating procedures and control systems:

- DLA Strategic Materials Safety Manager
- SOC Environmental Services
- SOC Fire and Emergency Services
- SOC Engineering, Facilities, and Planning Services
- SOC Equipment Maintenance, Electric Shop
- SOC Maintenance and Utilities
- SOC Base Operations
- SOC Contract Administration and Purchasing
- SOC Security
- SOC Safety and Health
- SOC Human Resources – Training

This procedure and its contents shall be reviewed at least annually and whenever a change has been incorporated. The review will be documented in the signature area located near the end of this document.

The SOC Environmental Services Manager will review the PHA and PSI prior to any proposed operating changes. If necessary, the NDEP provided MOC/PSSR Flowchart will be followed.

This document follows the International Organization for Standardization (ISO) 14001 Control of Documents Standard Procedure and the Standard Operating Procedure Program.

#### 9. PROCEDURES EVALUATED

1. This procedure, the PHA reports, and the procedures used in the development of the PHA's are available to affected SOC and DLA Strategic Materials personnel via the SOC G-drive (G:\Intranet\Environmental\environmental\_programs\air\CAPP from Intranet).
2. Signatures on the SPs indicate training of personnel is documented and will document the trainee's understanding.
3. The PHA and PSI are documented in accordance with 14001 Operational Control and Document Control Standard Procedures, as applicable to the specific process being analyzed.

Internal audits are conducted under the ISO 14001 Internal Audit SP and the CAPP Compliance Audit Program to assure compliance at a minimum of every three years.

#### 10. REFERENCES AND SUPPORTING DOCUMENTS

- Process Hazard Analysis for the Receipt and Storage of Mercury at HWAD, Tetra Tech, Inc, Reno, NV, 2007
- Supplemental Process Hazard Analysis for the Receipt and Storage of Mercury at HWAD, Tetra Tech, Inc, Reno, NV, 2010
- Mobile Mercury Transfer System Process Hazard Analysis MMSP-43 Rev1
- Supplemental PHAs issued for Mercury and CO<sub>2</sub>, 2010

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QUALITY PLAN  
SYSTEM LEVEL PROCEDURE  
ISO 9001:2003 SOC NEVADA LLC

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- Process Safety Information Program and supporting documents
- Standard Operating Procedure Program
- Pre-Startup Safety Review Procedure
- Management of Change Procedure and supporting checklist
- Employee Participation Program
- CAPP Compliance Audit Program SP
- Testing, Inspection & Maintenance of CO<sub>2</sub> Fire Suppression System 110 Hg Storage (DPD.IOP.FES.0015)
- 110 Hg Storage Buildings with CO<sub>2</sub> Suppression Response & Manual Activation of System (DPD.IOP.FES.0017)
- Mercury Monitoring & Response Internal Operating Procedure (DPD.IOP.FES.0019)
- Lockout/Tagout Procedures, Chapter 21, Quality Plan (SOC.OHS.SP.0002, Chapter 21)
- Refrigeration and Maintenance Plan (BOP.IOP.EMB.1300)
- Base Operations Start Up/Shut Down and CO<sub>2</sub> Tank Fill/Refill Procedure (QP.BOP.EMD.1301)
- Electrician Maintenance Plan (BOP.IOP.EMB.1302)
- Electronics Technician Mercury Storage (BOP.IOP.EMB.1303)
- Mercury Storage Sites & Stockpile Inspection (SOC.QP.QAD.0002)
- Fork Lift Operability – MAXIMO
- Carbon Dioxide Line Breaking Procedure for the Mercury Storage Warehouses (QP.BOP.001)
- HWAD MAXIMO System for tracking preventive maintenance schedule and calibration
- ISO 14001 and ISO 9001 Control of Standard Procedures and Documents (SOC G-drive Intranet Environmental Folder.)
- ISO 14001 Corrective and Preventive Action Standard Procedure (SOC G-drive Intranet Environmental Folder.)
- ISO 14001 Internal Audit SP (SOC G-drive Intranet Environmental Folder.)
- MOC Checklist.doc WORD format
- NDEP Provided MOC / PSSR Flowchart

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